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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,870	08/09/2006	Florence Clement	1022702-000302	8284
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EXAMINER				
GRAY, JILL M				
ART UNIT		PAPER NUMBER		
1798				
NOTIFICATION DATE		DELIVERY MODE		
09/29/2011		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

offserv@bipc.com

**Office Action Summary****Application No.**

10/565,870

**Applicant(s)**

CLEMENT ET AL.

**Examiner**

JILL GRAY

**Art Unit**

1798

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 February 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 5) ☒ Claim(s) 22, 26-28, 30-33 and 35-43 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 22, 26-28, 30-33 and 35-43 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/06)  
Paper No(s)/Mail Date \_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 7, 2011 has been entered.

2. Pursuant to the entry of the amendments of February 7, 2011 and April 8, 2011, the status of the claims is as follows: Claims 22, 26-28, 30-33, and 35-43 are pending. Claims 22 and 30 are amended. Claims 23-25, 29, and 34 have been cancelled.

***Response to Amendment***

3. The rejection of claims 22 and 26-43 under 35 U.S.C. 103(a) as being unpatentable over Cucinella et al., 6,160,080 is withdrawn in view of applicants' amendments.

***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 23, 26-28, 30-33, and 35-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thoma et al., 3,893,981 (Thoma), for reasons of record.

**Regarding Independent claim 22**

Thoma discloses yarn obtained from a composition comprising a polymer matrix formed from the polycondensation of monomers that can be lactams such as caprolactam, lauryl lactam or an aminocaproic acid in the presence of a difunctional compound that can be a monomer of b) or b'), such as adipic acid, sebacic acid, isophthalic acid or terephthalic acid, wherein said lactam are present in amounts of up to 100 mol%. The macromolecular chains of formula (II) are not required to be present. See entire document, and for example, abstract, column 2, lines 61-65 and column 3, lines 29-36 and Example 11.

Thoma does not specifically disclose that his yarns are abrasion-resistant or disclose an embodiment forming the specific structure of formula (I).

In this regard, Thoma discloses the formation of a polymer matrix that has recurring structural units that have close structural similarities to the generic formula (I) of present claim 22. See for example, column 4, lines 32-60. Also, Thoma discloses the polycondensation of monomers that are of the same type as those disclosed by applicants as being suitable, such as lactams i.e. caprolactam, wherein this polycondensation takes place in the presence of a difunctional compound, such as adipic acid. This is the same process disclosed by applicants in their examples. Note [0155] of US 2006/0275604. Hence, the prior art product is produced by an identical or substantially identical process as that of the inventive polyamide.

Therefore, the examiner has reason to believe that the resultant polymer is the same as or substantially similar to that claimed by applicants, and would have the same properties, such as abrasion resistance and that the generic formula (I) fully embraces

the polyamide of Thoma, in the absence of factual evidence to the contrary. "When the claimed and prior art products are identical or substantially identical in structure or composition, **or are produced by identical or substantially identical processes**, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562, F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not". *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01.

**Regarding dependent claims 26-28, 30-33, and 35-43**

Regarding claim 23, Thoma is as set forth above and further discloses the formation of polyamides. See entire document and abstract.

Regarding claim 26, Thomas is as set forth above and discloses up to 100 mol% of the polyamide structural units. See column 2, lines 49-57.

Regarding claim 27, as set forth above, Thoma teaches a polymer matrix that has recurring structural units that have close structural similarities to the generic formula (I) of present claim 22 and the polycondensation of the same type of monomers contemplated by applicants. Accordingly, the examiner has reason to believe that the resultant polymer is the same as or substantially similar to that claimed by applicants, and would have the same properties, such as a molecular weight amount that is within the claimed range of at least 25000 g/mol, in the absence of factual evidence to the contrary. "When the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially

identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562, F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

"When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not". *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01.

Regarding claims 30 and 33, Thoma discloses that his polyamide is obtained by copolymerization from a mixture that includes a difunctional compound that can be a monomer of b) or b'), such as adipic acid, sebacic acid, isophthalic acid or terephthalic acid. Thoma further discloses that this compound is present in an amount of 1.0 to 2.0 mol%. This teaching would render obvious the requirement of claim 30 of between 0.05 and 1 mol%, because the 1 mol% as taught in the prior art is sufficiently close to applicants' upper limit of 1mol% that the skilled artisan would reasonably expect the properties of the resultant polyamide to be the same or substantially similar. See column 3, lines 45 through column 4, and line 10.

Regarding claims 31-32 and 35-36, in claims 31 and 35, the phrase "melt-blending" is drawn to the method of making the polyamide, thereby resulting in a product-by-process claim. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process."

*In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113. There is no clear difference in the end product, i.e. the yarn of the prior art and that of the present invention. Claims 32 and 36 are reliant upon the process limitations of present claims 31 and 35. In addition, as set forth above, and incorporated herein, Thoma discloses that the difunctional compound can be present in amount within the claimed range set forth in present claims 32 and 36. Note Example 1, which teaches the adipic acid present in an amount of about 0.8 wt% with respect to the weight of the polyamide. As to claim 35 and the compound of formula (V), the teaching at column 3, lines 55-62 of Thoma render obvious this requirement.

Regarding claims 37-42, Thoma discloses the formation of articles comprising his yarns, such as textiles and fabrics, or foils. This teaching renders obvious the formation of a felt (claim 38), fabric (claim 41) and a net (claim 42). As to claims 39 and 40, the formation of carpets or rope or belts from yarns would have been obvious to one of skill in this art at the time the invention was made and is not construed to be a matter of invention, in the absence of specific properties that are directly related to the these end products.

Therefore, the teachings of Thoma would have rendered obvious the invention as claimed in present claims 22, 26-28 and 30-43.

6. Claims 22, 26-28 and 30-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over PCT Publication WO 03/029350 (Myard) with US 7,323,241 B2 relied upon as an English translation.

**Regarding Independent claim 22**

Myard discloses a precursor article of a composite material comprising a polymer matrix and at least one reinforcing wire and/or fiber. The polymer matrix and reinforcing polymer matrix comprises at least one polyamide possessing a star structure comprising star macromolecular chains and if appropriate, linear polyamide macromolecular chains. See column 3, lines 34-57. Also, Myard discloses at column 4, lines 5-7, that his polyamide optionally comprising linear polyamide chains.

Myard discloses that his polyamide is formed from the copolymerization of a mixture of monomers that include a multifunctional monomer of formula (1) and monomers of formula (IIa) or (IIb). See column 4, lines 15-34. The polyamide of present claim 22 is obtained by the copolymerization from a mixture of monomers comprising (a) a difunctional compound and (b) monomers of formula (IIIa) and (IIIb). The prior art monomers of formula (IIa) and (IIb) are the same as the monomers (IIIa) and (IIIb) of present claim 22. The generic multifunctional monomer of formula (1) of Myard embraces the difunctional compound of present claim 22. Hence, the polymer of Myard has the same structure as that of formula (1) of present claim 22. Applicants should note that formula (II) of claim 22 is not required. Again, Myard specifically discloses that his polyamide polymer includes linear macromolecule chains. See column 7, lines 15-16.

Myard does not disclose the claimed structure in his examples. However, disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments (see also *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971), *In re Gurley*, 27 f.3d 551, 554, 31 USPQ2d 1130, 1132,



(Fed. Cir. 1994), *In re Fulton*, 391, F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004). MPEP 2123.

Therefore, it is the examiner's position that though not specifically stated, the prior art teachings of Myard render obvious the polymer matrix comprising a polyamide of formula (1) essentially as claimed in present claim 22.

**Regarding dependent claims 26-28 and 30-43**

As to claims 26-27, 30-33, and 43 the polyamide of Myard is formed from the same monomers as applicants and results in the same structure as that contemplated by applicants as set forth above by the examiner and incorporated herein. The examiner has reason to believe that the general structural units from compound (a) and (b) of the prior art are within the ranges claimed by applicants. Also, the molecular weight range would be the same as well. Moreover, it would have been obvious to the skilled artisan to modify and adjust the macromolecular chains and molecular weight of the polymer based upon the desired mechanical properties.

Regarding claim 28, Myard discloses R2 as a pentamethylene radical, (i.e.  $\epsilon$ -caprolactam derivative in Example 1.

Regarding claim 31, Myard discloses that the polyamide is obtained by melt-blending the polymer with a reactive monomer. Note claim 4.

Regarding claims 35-36, Myard discloses that optional monomers of general formula (III) can be included. See column 4, lines 34-36. These monomers have the same general formula as applicants' compound of formula (V). As to the specific amount of this optional monomer, it is the examiner's position that since the result

sought, a macromolecular polyamide and the ingredients used were known, it was within the expected skills of one having ordinary skill in this art to arrive at the optimum proportion of those ingredients and any improved results would have resulted from experimentation of an obvious nature. *In re Reese*, 129 USQ 402 (CCPA 1961).

As to claims 37-42, Myard discloses that his article can be in the form of various articles such as yarns, mats, braids, and nonwovens. This teaching renders obvious the articles of present claims 37-42.

Therefore, the teachings of Myard would have rendered obvious the invention as claimed in present claims 22, 26-28 and 30-43.

### ***Response to Arguments***

7. Applicant's arguments filed February 2, 2011 have been fully considered but they are not persuasive.

Applicants argue that Thoma does not disclose each feature of independent claim 22 such as a polyamide comprising macromolecular chains corresponding to the formula (I).

The examiner disagrees. Though Thoma does not disclose the claimed structure in his examples, it is the examiner's position that disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments (see also *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971), *In re Gurley*, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132, (Fed. Cir. 1994), *In re Fulton*, 391, F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004). MPEP 2123. Also, Thoma discloses the same monomers as applicants in the formation of his

polyamide, namely, lactams, difunctional monomers and trifunctional amines. He also discloses that his polyamide can be linear or branched. There is no clear factual evidence on this record that the polyamide of Thoma does not have the claimed structural units.

### ***Double Patenting***

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to

be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 22, 26-28, 30-33, and 35-42 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 29-52 of copending Application No. 10/583,168. Although the conflicting claims are not identical, they are not patentably distinct from each other because the copending application claims a precursor article having yarn and/or fibers formed from the same polyamide of that of the present claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JILL GRAY whose telephone number is (571)272-1524. The examiner can normally be reached on M-Th and alternate Fridays 10:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Ortiz can be reached on 571-272-1206. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jill Gray/  
Primary Examiner  
Art Unit 1798

jmg